

FIG. 1

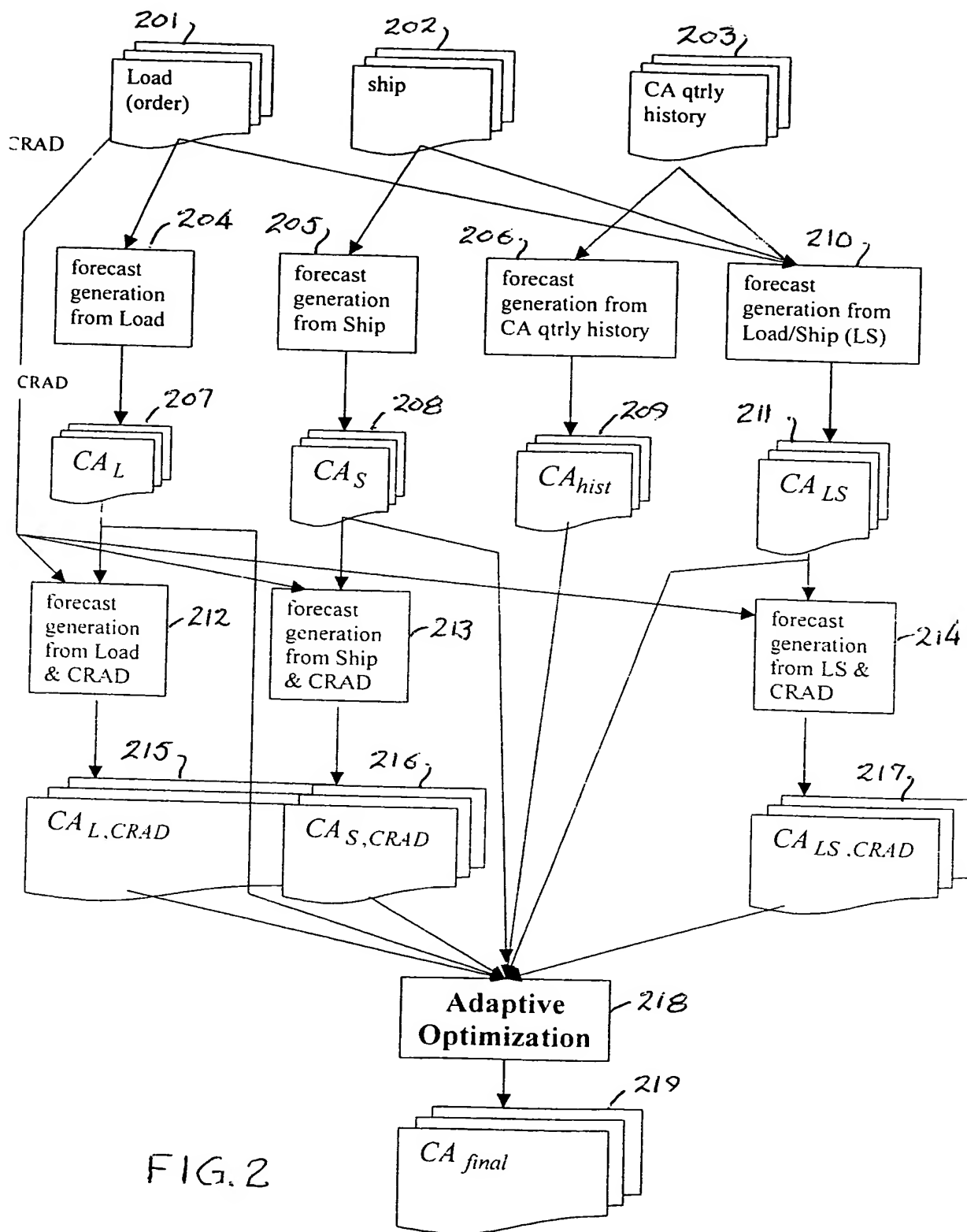


FIG. 2

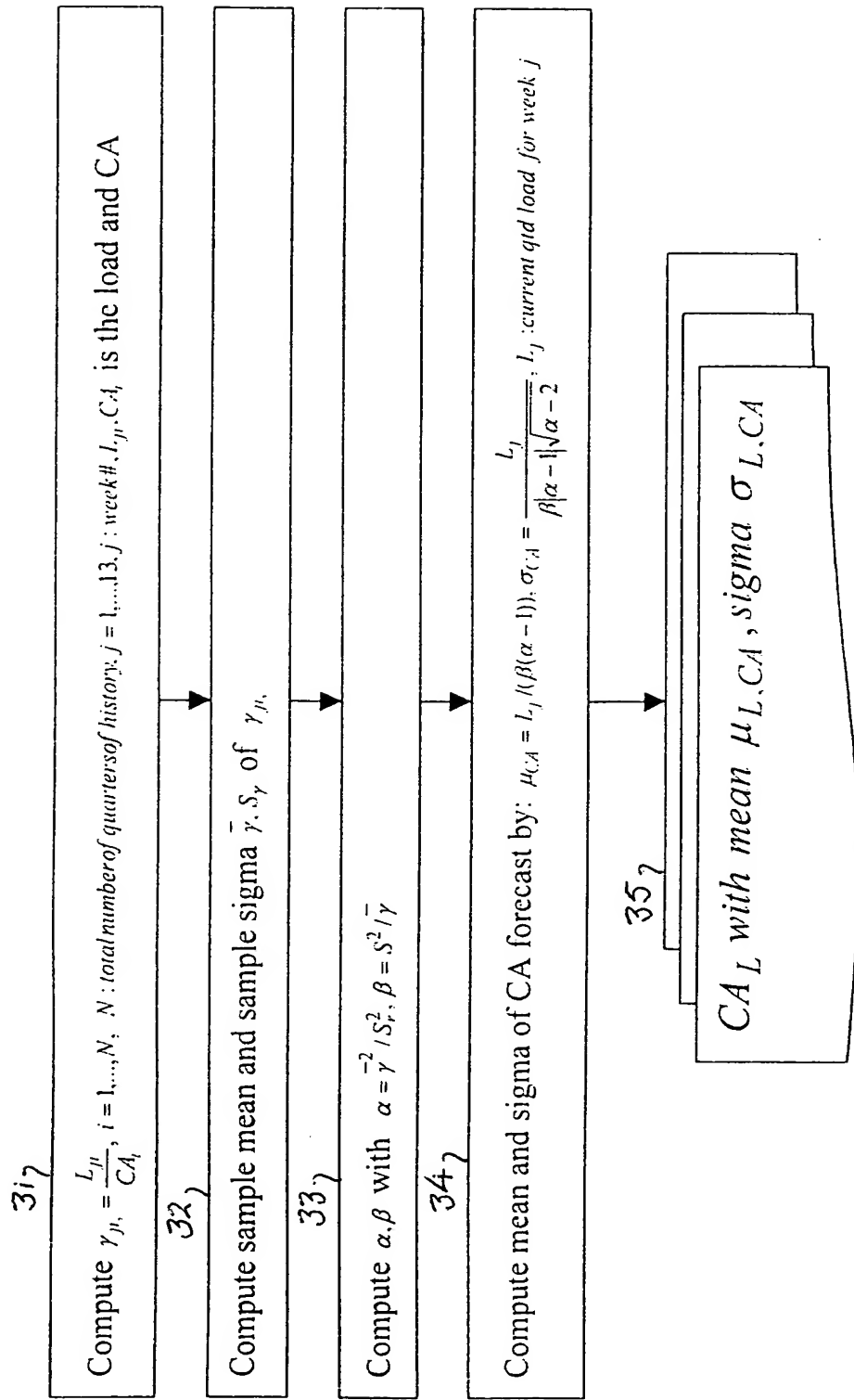


FIG. 3

41

Compute  $\gamma_{S,j} = \frac{S_j}{CA_j}$ ,  $i = 1, \dots, N$ ,  $N$ : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$ : week#,  $S_j$ ,  $CA_j$  is the ship and CA

42

Compute sample mean and sample sigma  $\bar{\gamma}$ ,  $S_\gamma$  of  $\gamma_{S,j}$ .

43

Compute  $\alpha, \beta$  with  $\alpha = \bar{\gamma}^2 / S_\gamma^2$ ,  $\beta = S^2 / \bar{\gamma}$

44

Compute mean and sigma of forecast for CA by:  $\mu_{S,CA} = S_j / (\beta(\alpha - 1))$ ,  $\sigma_{S,CA} = \frac{S_j}{\beta|\alpha - 1|\sqrt{\alpha - 2}}$ ,  $S_j$ : current week qtd ship

45

CA<sub>S</sub> with mean  $\mu_{S,CA}$ , sigma  $\sigma_{S,CA}$

FIG. 4

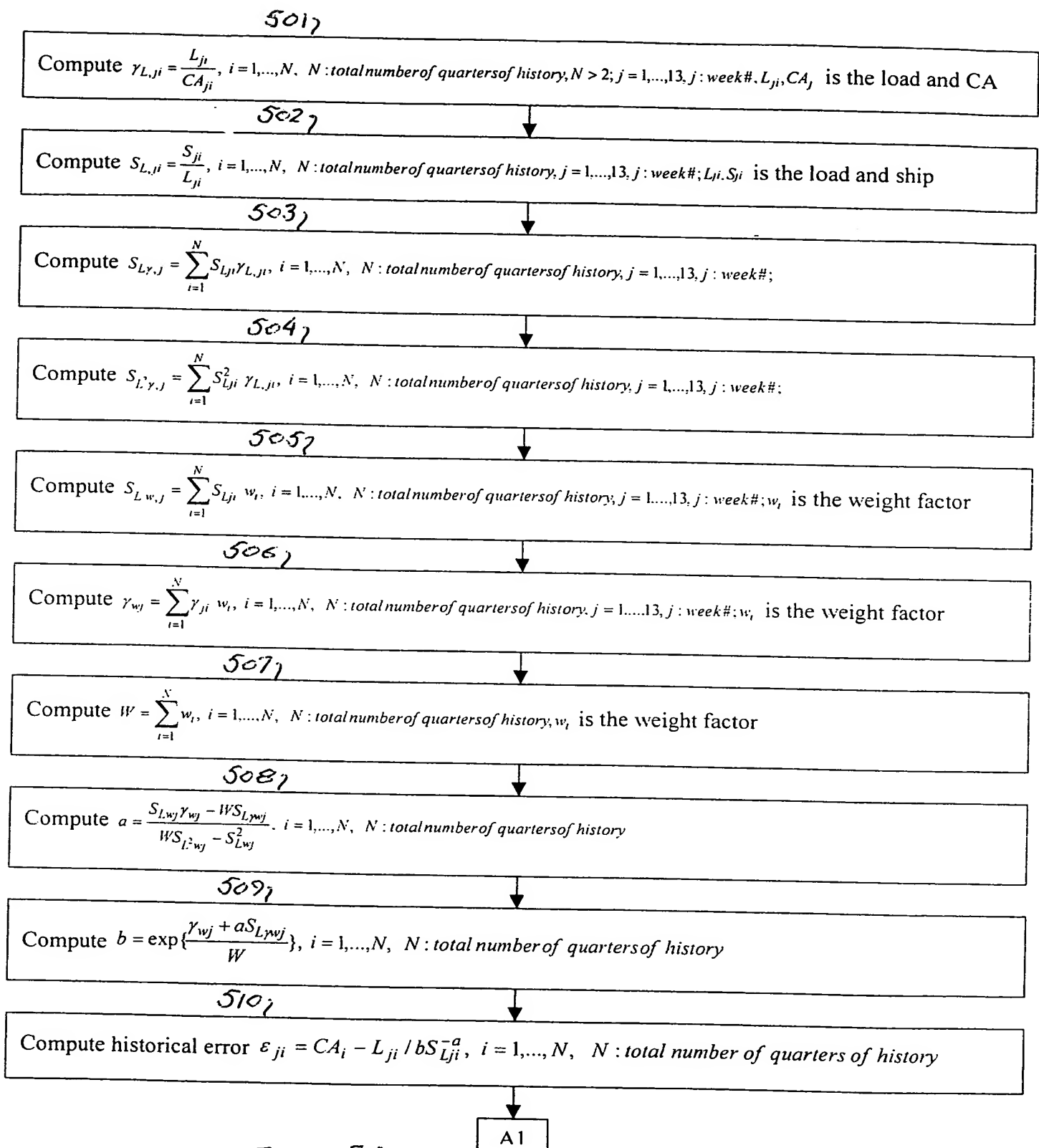


FIG. 5A

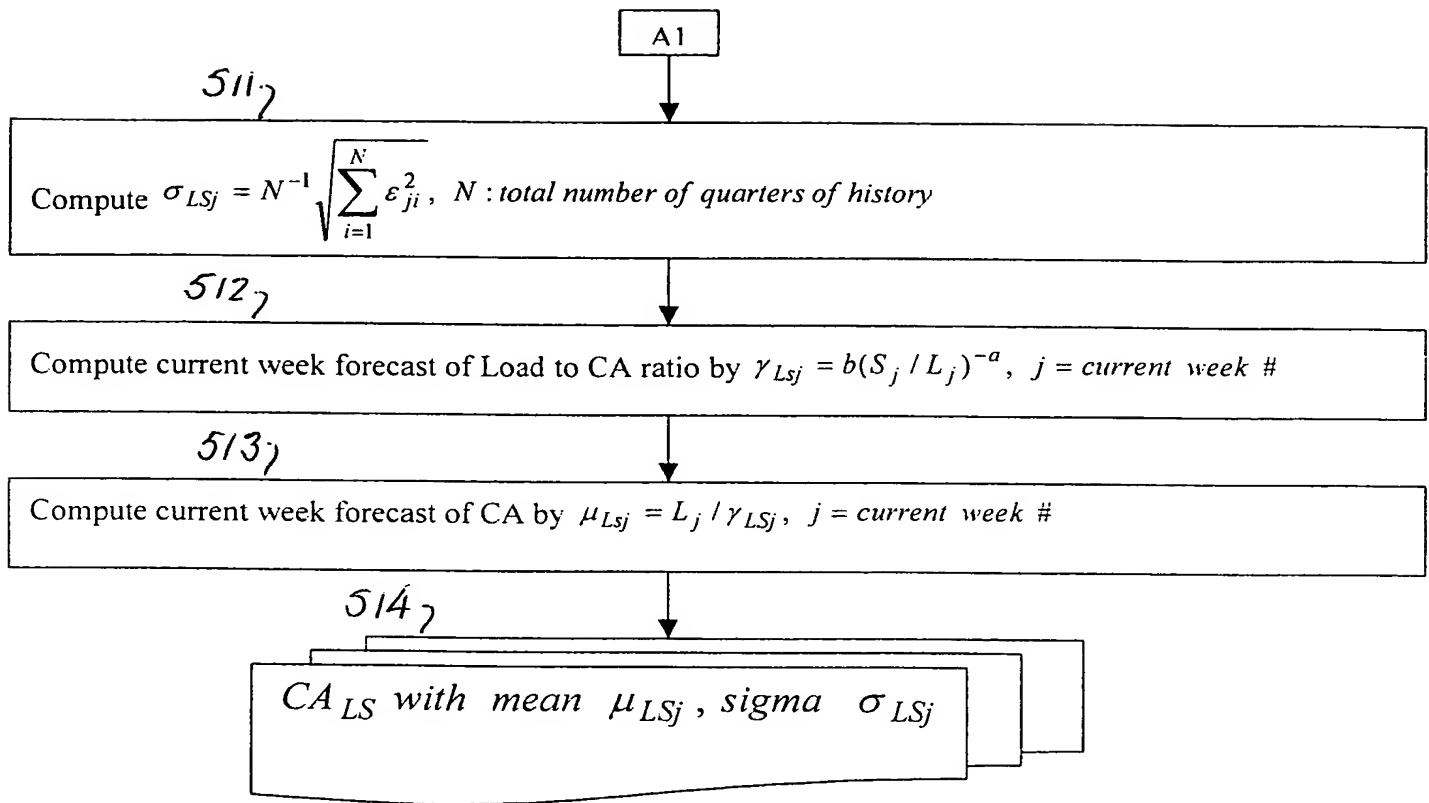


FIG. 5B

601)

Compute the mean and sigma for the histogram constructed from all the dates for the CRAD for each individual outstanding order on the order book as of any given week in history, and call it  $\mu_{CRAD,ji}$  and  $\sigma_{CRAD,ji}$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

602)

Compute  $SNR_{ji} = \ln\{\frac{\mu_{CRAD,ji}}{\sigma_{CRAD,ji}}\}$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

603)

Compute  $\epsilon_{ji} = CA_{ji} - \mu_{Lji}$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

604)

Compute  $\epsilon_{SNRj} = \sum_{i=1}^N \epsilon_{ji} SNR_{ji}$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

605)

Compute  $\epsilon_{SNRwj} = \sum_{i=1}^N \epsilon_{ji} SNR_{ji} w_i$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

606)

Compute  $SNR_{wj} = \sum_{i=1}^N SNR_{ji} w_i$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

607)

Compute  $\epsilon_{wj} = \sum_{i=1}^N \epsilon_{ji} w_i$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

608)

Compute  $SNR_{sq,wj} = \sum_{i=1}^N SNR_{ji}^2 w_i$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

609)

Compute  $\epsilon_{sq,wj} = \sum_{i=1}^N \epsilon_{ji}^2 w_i$ ,  $i = 1, \dots, N$ ,  $N$  : total number of quarters of history,  $j = 1, \dots, 13$ ,  $j$  : week #

R1

FIG. 6A

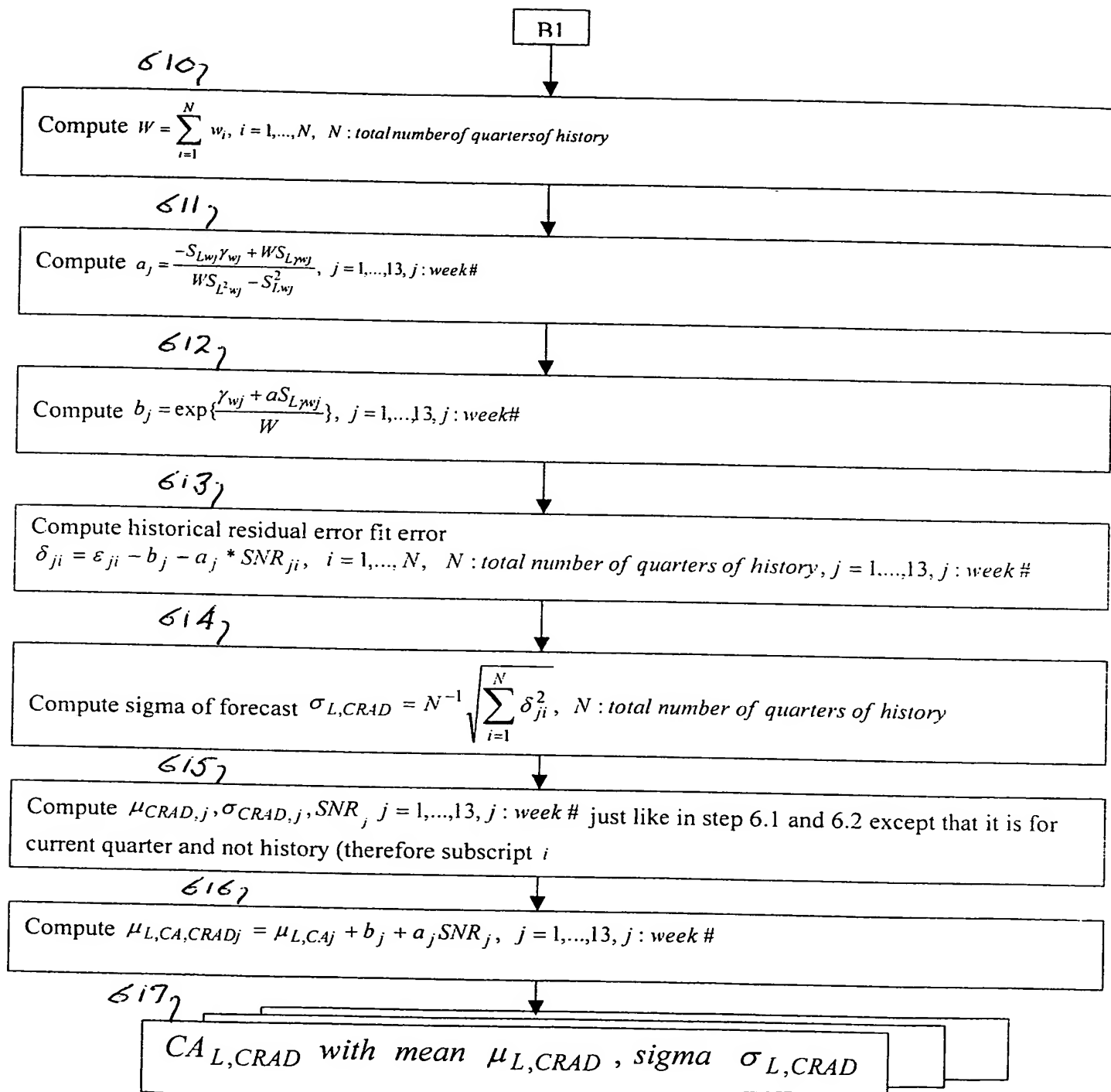


FIG. 6B



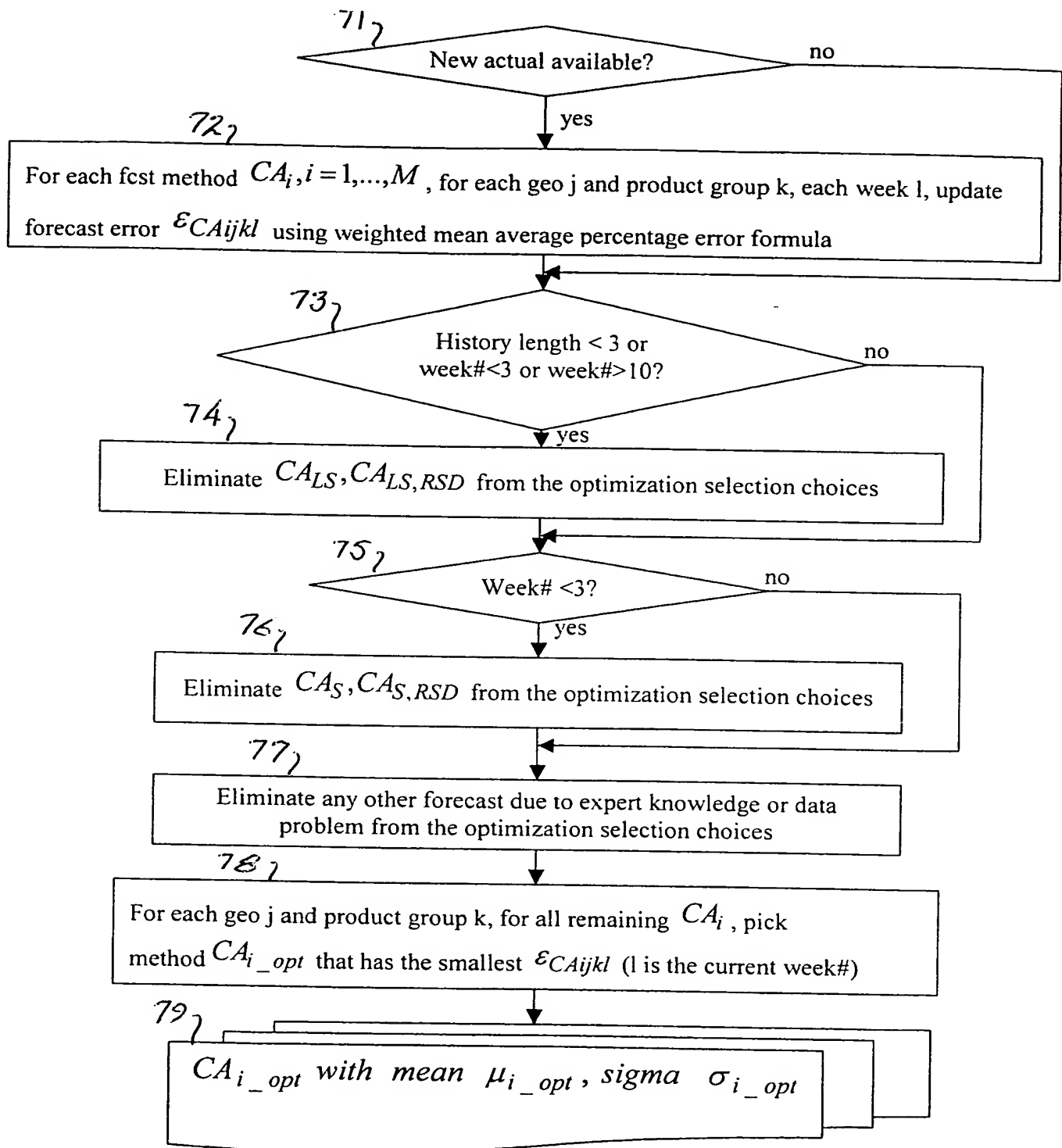


FIG. 7

Load/CA vs Ship/Load, week 5

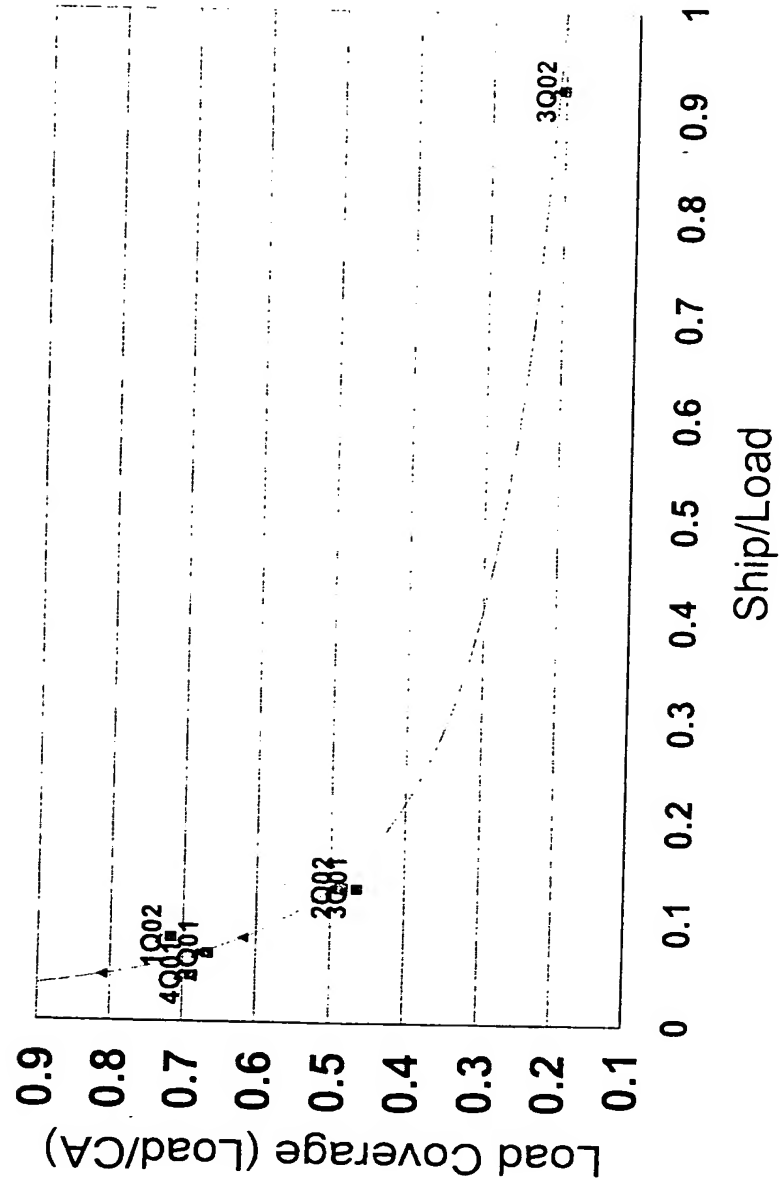
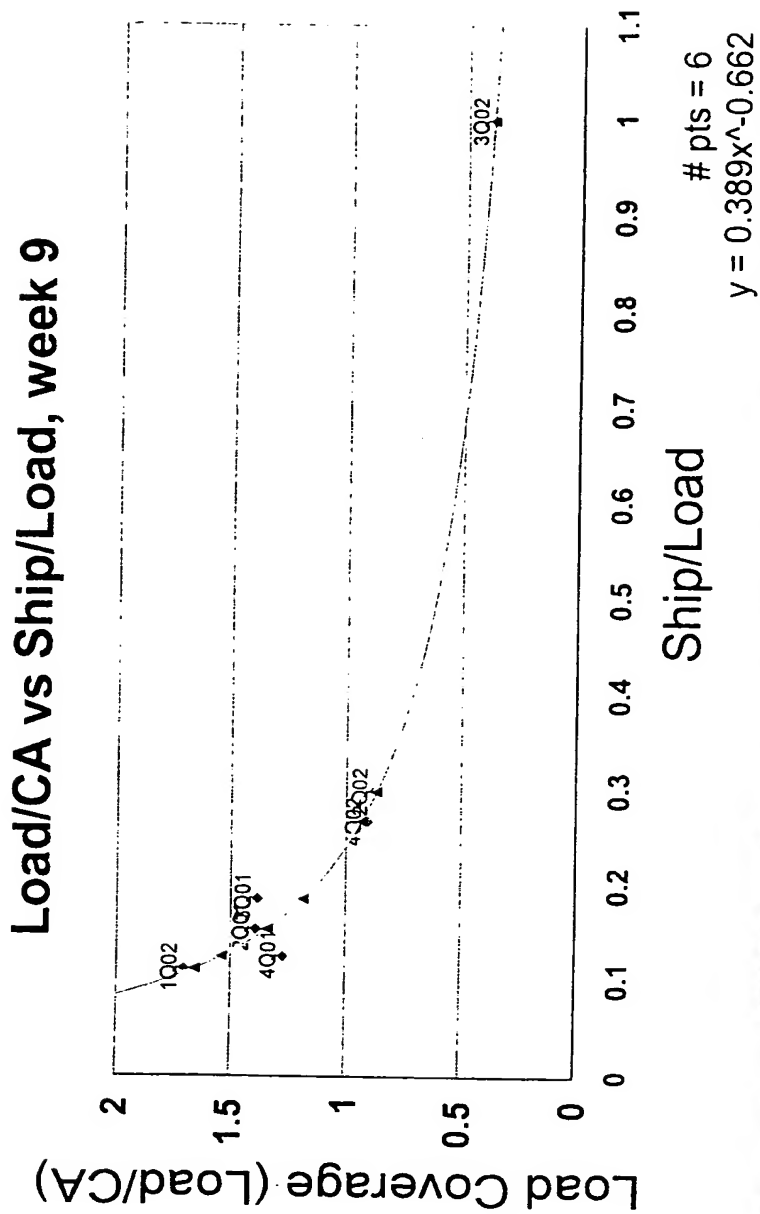


FIG. 8



CA=269

non-BIA forecast=351, 30.5% error

BIA forecast=262, -2.75% error

FIG.9

# CA perc error vs crad snr

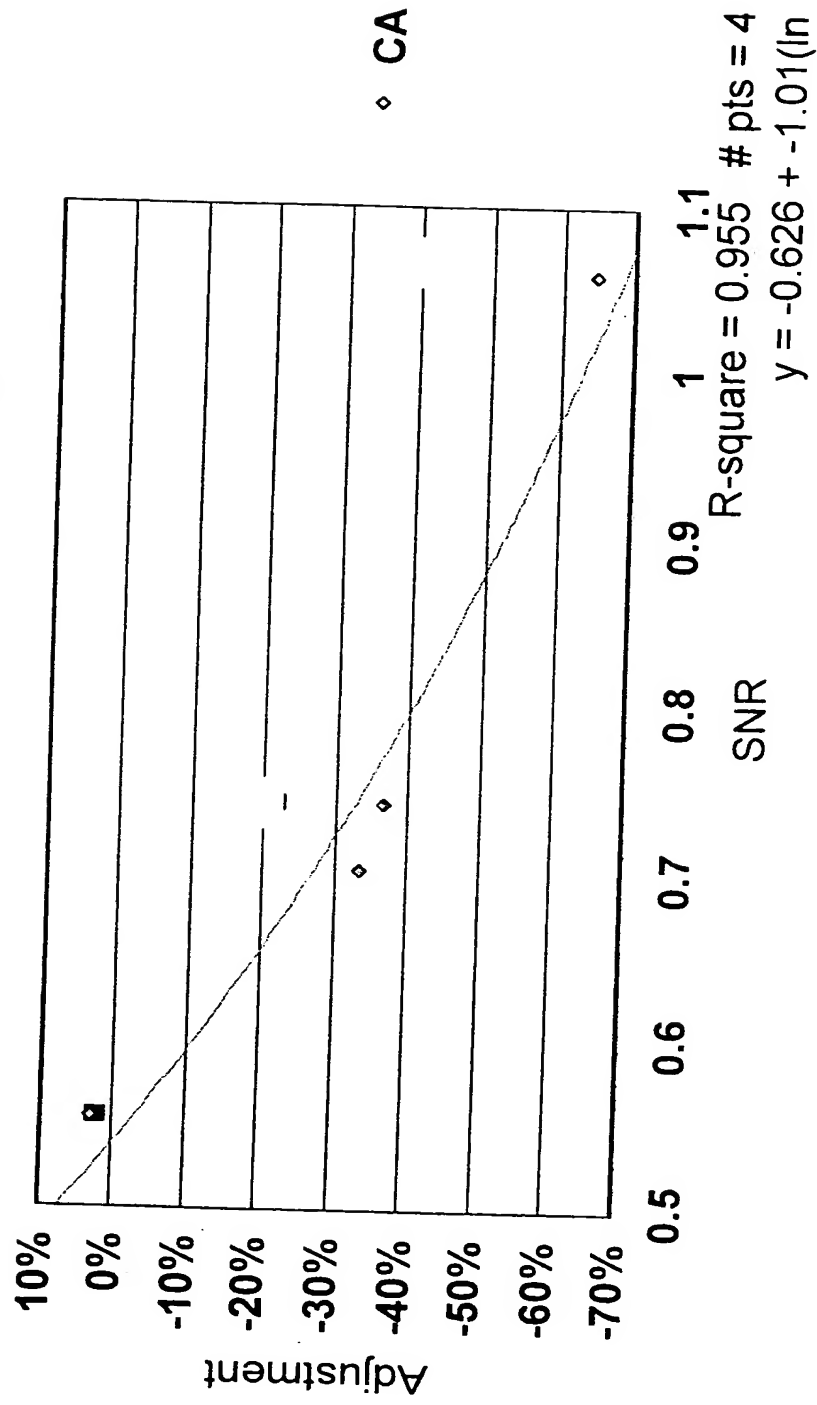


FIG. 10

# CA perc error vs crad snr,fcst

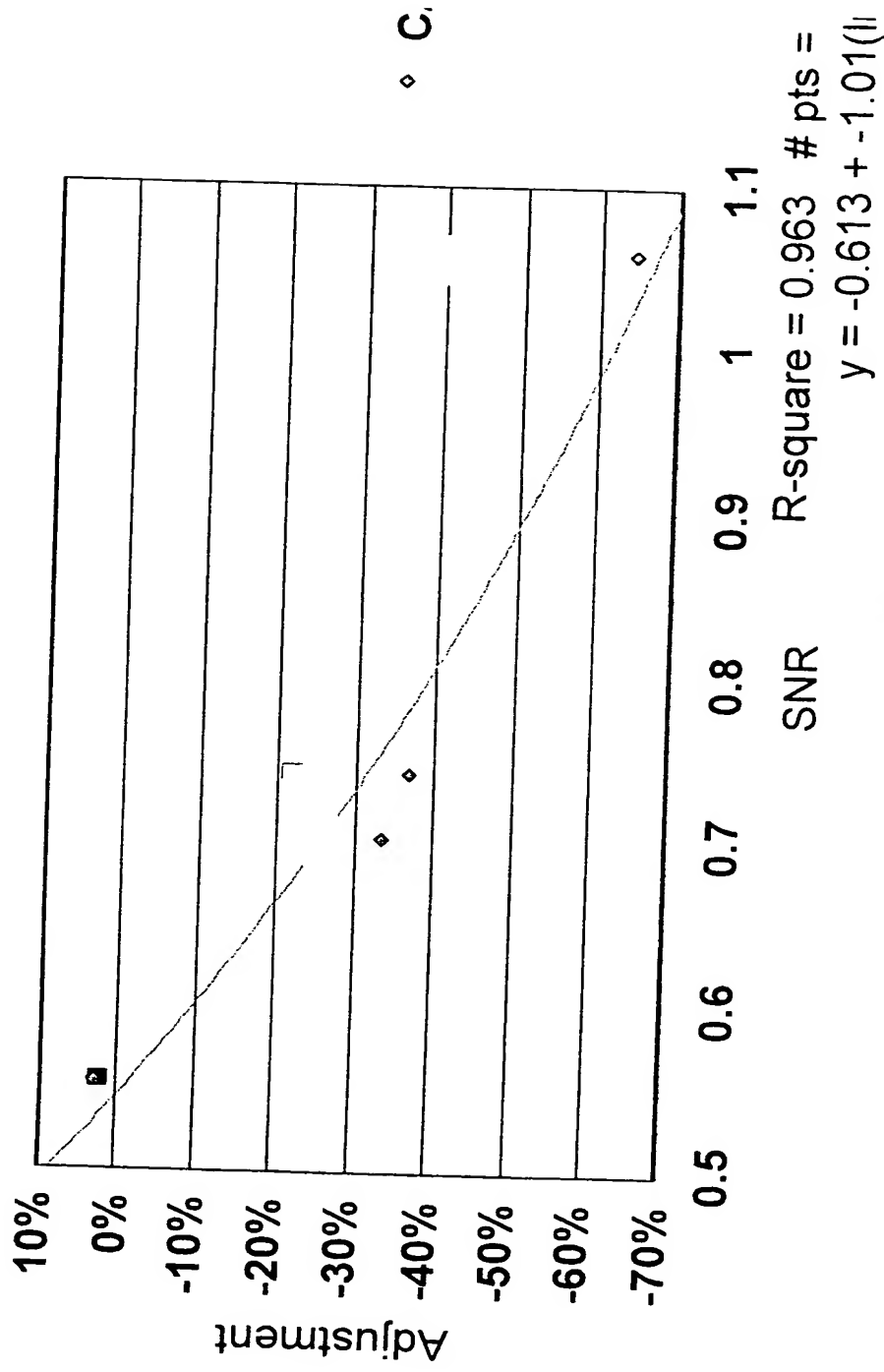


FIG.11

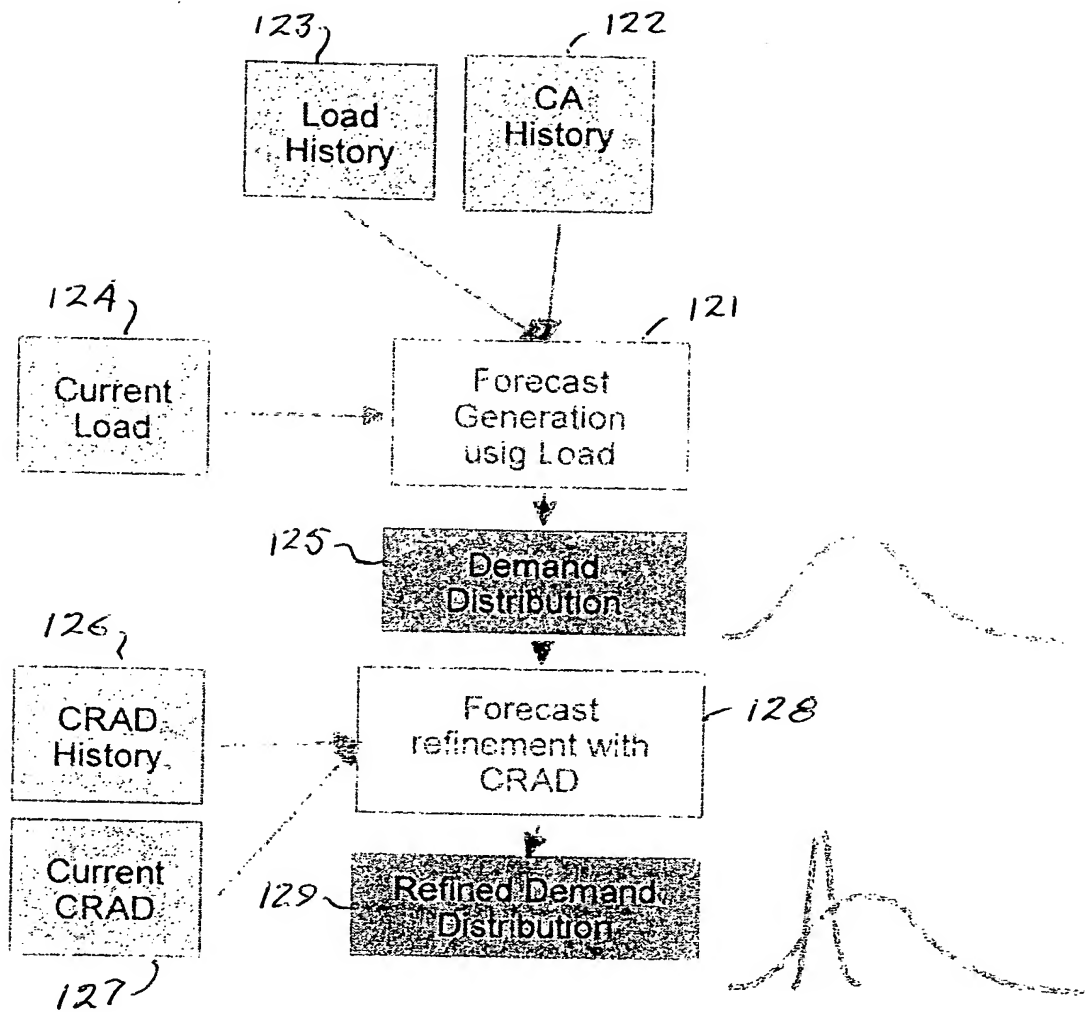


FIG. 12